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knowing rather than to the credit of *that organic adaptation*, if these two things are distinct?

Fourth. If the action of consciousness is not the action of *consciousness* but that of the *organic releases* that condition consciousness, why may not things be known as they were *when* they brought about the organic discharges, as well as be known as they become *after* these discharges have in turn reacted upon these things? In other words, once distinguish between consciousness and organic releases, what justification have we for asserting that knowledge can be only of the *effects* of the conditions of knowledge? If knowledge be distinct from its conditions, should we not study it as we study anything else, not confining ourselves entirely to the functions of its conditions, but extending our view to take in any possible functions it may itself have?

EVANDER BRADLEY MCGILVARY.

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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION¹

A MEETING was held on February 3 and 4, 1911, in the Psychological Laboratory of Columbia University. On the evening of February 3, a special session in memory of William James was held at the Faculty Club of Columbia University, and expressions of appreciation were given by Professors Miller, Angell, Thorndike, Jastrow, Calkins, and Dewey.

At a business meeting held on February 4, Professor R. S. Woodworth was elected chairman of the Branch, and Dr. H. L. Hollingworth was elected secretary and treasurer. On motion of Professor Dodge, the thanks of the Branch and especially of the visiting members of the Association were conveyed to the members from Columbia University for their hospitality.

The attendance was large, many members of the Association being present from a distance.

An abstract of the scientific proceedings follows.

A Report of Class Experiments on the Relation between Rate of Acquisition and Retention: NAOMI NORSWORTHY.

This experiment was undertaken by 83 students in educational psychology. The material used was a German-English vocabulary

¹The tardy appearance of this report is due to the failure of some contributors to the meeting to send abstracts of their papers promptly to the secretary.

of 1,200 words. The subjects studied 20 minutes a day for five days, learning in each study period at least 40 words and as many more as possible. This was repeated a second and third time. Two or three days after the third week's work, a test list of 50 words was given. These words were chosen from the number studied three times by every student. This test was repeated with a different list of words, after a month's time.

The number of words learned by the subjects ranged from 177 to 923, the median being 468. The half of the class which learned the greatest number of words remembered 70 per cent. at the first test and 73 per cent. at the second. The lower half of the class scored 52 per cent. and 47 per cent. at the same tests. The group which learned over 700 words remembered 76 per cent. and 78 per cent. when tested, while those who learned less than 300 words remembered only 46 per cent. and 36 per cent.

These experiments give evidence that those who memorize most quickly, and who therefore learn the greatest number of words in a given time, are also the ones who retain the largest proportion of what they have learned.

Feeling and Recall: E. N. HENDERSON.

In "trial-and-error learning" we tend to eliminate disagreeable reactions and to retain only the agreeable ones. Do we similarly tend to forget disagreeable experiences? To settle this it is necessary to distinguish experiences disagreeable when they occurred, but which it is not disagreeable to recall, from unpleasant memories. On the question whether we forget the disagreeable, experiment seems to offer a negative answer. Ten persons were experimented with. It was found that of experiences recalled at random from the past, 55.1 per cent. were originally agreeable, 11.8 per cent. indifferent, and 33.1 per cent. disagreeable. The average deviation of individual results from these percentages was small, being for agreeable experiences 6.7 per cent., for indifferent ones 4.6 per cent., and for disagreeable ones 4.7 per cent. It would seem that the proportion of disagreeable to agreeable experiences in the average life would be smaller than that of 33.1 per cent. to 55.1 per cent. In that event the experiment would indicate that we remember more of the disagreeable.

As to banishing disagreeable memories, it is likely that the tendency exists to some extent. However, every one knows that such ideas may rise insistently into consciousness. We endeavor to modify the situations with which they are related if these persist, or to interpret the situations to which they refer more satisfactorily, or, if no such solution is available, to get rid of the disagreeableness by ban-

ishing the memory. The last method is commonly only a last resort—otherwise consciousness, which exists to remedy such disagreeable conditions, would, by forgetting what it is to do, destroy its use.

The Joint Sense: W. P. PILLSBURY.

In 1902 the author published an article to show that Goldscheider's proof for the localization of the sense of movement in the joint was inadequate. Recently Spearman suggested that not sufficient positions or rates of movement had been used. Two students, Mr. Winter and Mr. Toney, repeated the earlier experiments, using four speeds and six or eight different positions of the elbow. The experiments confirmed the earlier results in every particular. Briefly summarized, the arguments against the joint sense are: (1) passing the induction current through the wrist or forearm increases the limen for movement as much as or more than passing the current through the elbow joint, at which the movement takes place; (2) no sense endings have been discovered on the synovial membrane or within the joint capsule (the organs usually referred to the joint surfaces are pacinian corpuscles in the fatty tissue near the joints); (3) introspection places the sensation in the forearm or even in the fingers. The seat of the sensations of movement is primarily in the muscles and tendons of the entire arm. These must be affected by any movement. Many subjects felt the fingers bend with flexion of the elbow. Skin and capsule and ligaments may contribute in some small degree, but are less sensitive.

Theories of Fatigue: EDWARD L. THORNDIKE.

Theories that interpret mental work and mental fatigue after the analogy of physical work and the diminution in energy caused by energy expended are radically unsound.

The differences within the same individual in different sorts of work and between different individuals in the same sort of work are not easily explainable on any mechanical theory, nor are the marked effects of interest and motive. Biological theories, whereby diminution in the work produced is a result not only of intrinsic changes in the process itself, but also of extrinsic changes or "by-products" and the negative effects of various deprivations, are more helpful.

No physical analogy is necessary in investigations of mental work and mental fatigue. Mental work is best defined as the behavior whereby certain products, such as books written, poems memorized, computations done, problems solved, and the like, are produced. Rest is best defined as the absence of such behavior. Mental fatigue is best defined as that diminution in ability to do mental work which rest can cure.

Application of the "Order of Merit" Method to Advertising: EDWARD K. STRONG, JR.

To test the reliability of the "Order of Merit" method when applied to advertising, a series of 50 Packer Tar Soap advertisements were secured. Twenty-five subjects sorted the advertisements in the order in which they would buy the soap. They arranged them into as many piles as they desired, but so arranged them that the difference in superiority of one pile over the next was just noticeable. If greater differences were noted, they were to leave as many gaps as they felt were needed to indicate this superiority. When this was finished they were asked to designate the pile, if there was such, which had no appeal at all. The highest pile was then arbitrarily assigned the value of 100, and the pile which the subject designated as having no appeal was assigned the value of zero. The remaining piles were assigned values proportionately.

The series was then arranged by Mr. E. A. Olds, Jr., of the Packer Manufacturing Company, and also by the Blackman-Ross Advertising Agency, who are now handling the company's advertising business. These two arrangements were based not on actual data but on the general experience of the firms.

Between the experimental order and either of the two orders of the advertising experts, there is a correlation of $+ .52$, while between the two experts there is a correlation of $+ .64$.

From the above figures we have an order of the superiority of these advertisements as to "pulling-power." We also have the amount of difference between any two advertisements.

These relationships are lower than that which has been obtained with other sets of advertisements. For example, a correlation of 100 has been obtained between the experimental order and the actual order based on the company's data with a set of lathe advertisements from the Bullard Machine Company.

Cephalic Indices in Relation to Intelligence: PAUL R. RADOSAVLJEVICH.

The author has made an extended anthropological-psychological investigation of the much-discussed question of the relation between cephalic indices and age, sex, race, social condition, heredity, and intelligence. The individuals who furnished the basis for this study were children and adults, of both sexes, educated and uneducated, European and American, aggregating 4,634 persons. All the cephalic indices studied—(1) length-breadth c.i.; (2) length-height c.i.; (3) breadth-height c.i.; (4) cephalic module; and (5) index for cephalic capacity—are based on three head measurements: (a) maximum length, (b) maximum breadth, (c) maximum height,

as defined by the Martin school. The classification of the indices is based on Martin and Vierordt. Martin's instrumentarium was used in making the measurements. In grading the intelligence of school pupils several methods were used; but the following results are based on only one of these methods, consisting of a synthesis of school marks and teachers' personal judgments, with special reference to ability in mathematics, physics, and grammar (the author believing with Professor Meumann that intelligence can not be measured as a whole, but only in some of its higher capacities). When the *very* bright and *very* dull pupils are alone compared, the following differences appear:

1. Compared with the very dull, the very bright are more or less brachycephalic, at all ages from 6 to 20 years, except at 6 and 7 years, at which the very bright pupils are mesocephalic. This difference between the two classes of pupils is not one of type but of degree.

2. Very bright pupils are much more chamecephalic than the very dull ones—again a difference not in type but in degree.

3. The breadth-height index and cephalic module are about the same in both classes of pupils.

4. The index of cephalic capacity (product of maximum length, breadth, and height) seems the best cephalometric criterion. The very best pupils are emmetrocephalic from 6 to 14, and encephalic from 15 to 20 years of age. The very dull pupils are inferior in all ages tested: they are nannocephalic from 6 to 11, and emmetrocephalic from 12 to 20 years of age.

5. All these statements are based on median values only. If we take into account the maximum and minimum values, we find many exceptional cases, showing that very dull pupils may excel all very bright pupils in every cephalic measurement, and *vice versa*.

The System of Habits and the System of Ideas: ROBERT MAC-DOUGALL.

The general character of mental development may be described as adaptation. It involves two factors, a form of response already established and an activity tending to modify it in conformity with a variation in the system of stimuli. The former is reflected in habit, which represents the elements of permanence in experience; the latter appears in attention and the systematic consciousness to which it leads, and reflects the margin of variability in experience. The terminus towards which the process of habituation moves is unconscious automatism. The system of ideas exists only in so far as the conditions of habit-forming fail within any given field. In the universe of experience the system of habits gives to ideal activity its

point of origin and direction; the system of ideas gives to habit a telic value, and maintains its commensurability with an enlarging environment. Without habit, experience would be an irrational chaos; without ideas, it would have no existence, since the term is predicated only when adaptation constitutes an ideal process determined by a specific aim and a sense of value. Normal development, therefore, is that process of change which leads towards a more complex synthesis of habit-modes and a widened ideal horizon; and the highest type of self is that in which a life of the most intense intellectual activity finds at once its basis and its object in the fullest organization of experience in significant reactions of the will.

Vicarious Functioning of Irrelevant Imagery: H. L. HOLLINGWORTH.

Observations of waking moments, the drowsy consciousness, and dream states, indicate that any sensory element—imaginal, perseverative, or immediately sensory—may serve to carry forward thought processes to which they are intrinsically unrelated. Association tracts, the activity of which may underlie the consciousness of relation, can only function as connecting lines between two end processes. But any sensory process available at the time may discharge into association tracts already functioning. This paper will appear entire in a later issue of this JOURNAL.)

Historical Note on the Psychology of Relations (1): R. S. WOODWORTH.

The "ideologists," flourishing in Paris at about the opening of the nineteenth century, while holding with Condillac that all thinking is sensing, recognized several classes of "sensations" or feelings. Thus Destutt de Tracy, perhaps the first, spoke of four kinds of sensations: sensations proper, memories, judgments or feelings of relation, and desires. His successor, Laromiguière, accepts practically the same division, and his arguments in favor of feelings of relation read very much like those of Ehrenfels in favor of Gestaltsqualitäten. The same can be said of the Scotchman, Thomas Brown, a contemporary of Laromiguière.

Interpretations of Imageless Thought (2): R. S. WOODWORTH.

Imageless thought, as a gross and approximate fact, seems to be accepted; but its interpretation is much in doubt. One interpretation (Miller) lays stress on bodily sensations which may accompany an otherwise unconscious process of thought. Another interpretation (Wundt) speaks of blended incipient images, unrecognized at the moment of "imageless" thought, but filing successively into clear consciousness, as words, etc., during the following moments. One interpretation (Titchener, Book) holds that, with familiarity, a thought may tend towards automatism, and thus become nearly

unconscious, or, in other words, "imageless." In opposition to these negative interpretations, the speaker offered the positive conception of "thought elements," according to which every relation or pattern apprehended was, dynamically, a unit of reaction, and, descriptively, a new event in consciousness, involving fresh content not otherwise to be experienced except in the apprehension of that particular relation or pattern.

A Plan for the Experimental and Observational Study of the Efficiencies of Normal, Subnormal, and Supernormal Individuals:
J. E. W. WALLIN.

The paper outlined a plan for the study of the problems of human efficiency recently adopted in the psycho-clinical laboratory of the New Jersey State Village for Epileptics. The scheme comprehends a survey of the *intellectual* efficiency of normal and abnormal individuals by clinical and experimental methods (the Binet-Simon tests, a set of serial group tests of the growth of various mental capacities, etc.), and by observational methods (school efficiency reports by teachers); a survey of the *motor-industrial* efficiency by the method of observation (industrial efficiency reports by officers, supervisors, and attendants); and a study of the *personal, social, and moral* capacities by the method of observation. It is expected that the results will supply data by means of which satisfactory schemes for the classification of defectives and diagnostic measuring scales of personal, intellectual, and industrial (motor) development may be constructed. A set of blanks were shown on which the results are recorded. All the forms in use in the institution are so made that they can be fastened together in book form, and thus supply a complete case history for each individual.

On the Question of Association Types: FREDERIC LYMAN WELLS.

An account of the tendency towards preservation of individual types in two records of the Kent-Rosanoff experiment with fourteen subjects, made over a year apart. The results show only a fair degree of fidelity to type in respect to the association time, but pronounced fidelity to type in respect to the tendency to give usual or infrequent responses (by the Kent-Rosanoff frequency tables), and also according to classification of the responses in respect to logical category. In both frequency and quality of the responses, the association test preserves a distinctness of individual type that compares favorably with many other psychological experiments. At the same time the results show that one can not ignore the possibility of personal fluctuations of considerable magnitude. In the presence of a demonstrable tendency to preserve type, extreme personal fluctuations are among the most important phases of the experiment.

The Prevention of Insanity: Hygiene of the Mind: A. J. ROSANOFF.

Insanity is very common and is apparently increasing at a rate which is about twice as great as the rate of increase of the general population.

Among the causes of insanity may be distinguished (1) those that are *essential*—heredity, alcoholism, syphilis, and head injuries—and (2) those that are merely *incidental* or *contributing*; these are innumerable, for almost any disturbing influence, no matter how slight, may determine an outbreak of insanity in the presence of one of the essential causes. The prevention of insanity consists largely in measures for combating the essential causes.

Experience has shown that the great mass of individuals, even if made fully aware of all dangers, will not practise preventive measures in any systematic manner. Dissemination of knowledge should be regarded as but a preliminary step which will make possible the application of large measures by society as a whole, and nothing less than that constitutes an effective system of mental hygiene.

Social measures which have been practised with any degree of success and which may, therefore, be recommended for more general adoption, are discussed at some length: sterilization of neurotics and defectives by the operations of vasectomy and salpingectomy, the control of retail liquor traffic by the Swedish system, the hospitalization of cases of syphilis during the period of greatest infectiousness, the employment of Ehrlich and Hata's "606," the application of prophylactic treatment according to Metchnikoff and Roux, etc.

The Use of the Selenium Cell for Measuring the Energy of Spectral Lights: JOHN B. WATSON.

Idealism, Realism and the Theory of Value: WILBUR M. URBAN.

This paper has been published in full in the *Philosophical Review*.

A Working Hypothesis for Inner Psychophysics: RAYMOND DODGE.

This paper has been published in full in the *Psychological Review*.

Some Results of the Binet Tests for the Study of Children: WILL S. MONROE.

Dream Analysis and Psychoanalysis: JOSEPH JASTROW.

A course of nine lectures by as many members of the Association was in progress at the time of this meeting; and two of these lectures, occurring on the days of the meeting, formed practically part of its program. These were:

Frailties of Imageless Thought: J. R. ANGELL.

The Standpoint and Scope of Social Psychology: MARY WHITON CALKINS.

R. S. WOODWORTH,
Secretary.

COLUMBIA UNIVERSITY.